

**REVIEW OF CITY OF SACRAMENTO PUBLIC VEHICLE
MAINTENANCE FACILITIES, MATERIAL STORAGE
FACILITIES, AND CORPORATION YARDS**

Prepared by Archibald & Wallberg Consultants

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REVIEW OF CITY OF SACRAMENTO PUBLIC VEHICLE MAINTENANCE FACILITIES, MATERIAL STORAGE FACILITIES, AND CORPORATION YARDS

In 2004, a review of City facilities was conducted in order to determine which additional City facilities should prepare and implement Stormwater Pollution Prevention Plans (SWPPPs). This review was conducted as the first step in satisfying the Stormwater NPDES Permit Provision 10. c. i. that states:

“Each Permittee shall prepare and implement SWPPPs for public vehicle maintenance facilities, material storage facilities, and corporation yards having the potential to discharge pollutants to the MS4 and/or waters of the state. This requirement shall only apply to those facilities not already covered under the General Industrial Permit.”

This report addresses this specific permit provision with respect to the need to implement SWPPPs. Other BMPs are implemented by the City to address other municipal facilities and activities that are not addressed by this permit provision.

The conduct of the work in performing the review is described below followed by a summary of results. A master table is attached, which comprehensively summarizes the results of the review. Also attached are descriptive notes on several individual facilities that provide additional information on those facilities. Facility locations are shown on an attached map.

CONDUCT OF THE WORK

The work was principally conducted by Jeanne Wallberg of Archibald & Wallberg Consultants and reviewed by Delia Garrison of the City of Sacramento Department of Utilities. The work consisted of the following steps:

Compiled a comprehensive list of facilities for review. Several sources of information were used in compiling the list including: (1) a list of all City owned properties, (2) individual lists of Public Works Department, Department of Utilities, and Convention and Culture Department facilities, and (3) a list of City facilities with fuel storage onsite. These individual lists were culled for potential vehicle maintenance, materials storage, and corporation yards based on title description. For example, properties described as office buildings or parking lots were not selected.

Sorted the list by drainage. Facilities in areas that drain to the MS4 or to a creek or river were separated from facilities within the combined sewer system (CSS). For information purposes, facilities within the CSS are shown on the attached master table along with some information collected on those facilities. However, since these facilities do not discharge to the MS4 or waters of the state, it was judged that they do not require a SWPPP.

Evaluated the facilities in areas that drain to the MS4 or to a creek or river for the potential to discharge pollutants. This best professional judgment evaluation was based on ascertaining the nature of operations and materials at the facility with respect to potential exposure to runoff, i.e. what activities/storage is done inside or in areas with sanitary sewer drainage versus what is done outside. Information was obtained from phone contacts and/or site visits: facilities where site visits were conducted are noted on the master table. Storage and operations at some facilities was judged benign, insignificant, or protected from storm drain system: no SWPPP is recommended for these facilities. Facilities with potential to discharge pollutants were categorized as: (1) recommended to develop and implement a SWPPP, or (2) no SWPPP recommended if certain modifications to some operational practices are made, or where the potential exposure is solely spill related and a Spill Prevention Control and Countermeasure Plans or Hazardous Materials Plans covers that area of potential exposure.

SUMMARY OF RESULTS

A SWPPP is recommended for the new North Area Corporation Yard and for the 35th Avenue Combined Wastewater Treatment Plant site. A SWPPP is not recommended for several other facilities where:

- Sole exposure is spills and the facility has or will have a spill response plan in 2004.
- The facility has a spill response plan. There are some other types of exposure, however, these could be addressed through changes in operations.
- Materials/chemical storage is benign, insignificant, and/or protected from storm drain system. Vehicle maintenance activities are protected from the storm drain system.

A summary of results is provided in Table 1.

Table 1. Summary of Results (a)

Facility	Review Result
North Area Corporation Yard	SWPPP is needed and will be completed before 2004/05 rain season. (b, c) Other corporation yards in MS4 have SWPPPs.
Combined Wastewater Treatment Plant – 35 th Avenue site	Although limited industrial outside activity at this site, wastewater treatment plants fall categorically under the stormwater regulations. A SWPPP will be proposed. (b, d)
Miller Park Marina Haggin Oaks Golf Complex Bing Maloney Golf Complex	These facilities have spill response plans. No SWPPP is recommended if certain modifications to some operational practices are made. (b)
Fire stations with fuel storage Sumps with fuel storage	No SWPPP is recommended - SWPPP would be duplication of spill response plan. (b)

Facility	Review Result
Water treatment plants Police garage facilities Old Sacramento storage building and trash enclosure Park and Softball complex storage buildings Chemical storage at pools Bartley Cavanaugh Golf Course	No SWPPP is recommended - materials/chemical storage is benign, insignificant, and/or protected from storm drain system. Vehicle maintenance, where applicable, is protected from storm drain system.
Police Annex Fleet Maintenance Shop Eleanor Yard Garage	No SWPPP is recommended. Facilities will close in summer 2004.
Sacramento Army Depot	Leased business park - is not a City operation.

(a) See attached master table and (for some facilities) individual review forms for more information.

(b) Spill response plans will be provided to Regional Water Quality Control Board, as requested.

(c) City Safety Officer will develop the SWPPP and file a Notice of Intent for Coverage under the State General Industrial Permit.

(d) The City Wastewater Superintendent will address and incorporate a SWPPP into the upcoming wastewater discharge NPDES Permit renewal application (NPDES Permit Number CA0079111).

Stormwater Program staff will track the development of a SWPPP for the new North Area Corp Yard and the combined wastewater treatment plant, will track that all spill response plans are developed, as planned (this pertains to sumps and fire stations), and will conduct follow-up site visits at the Miller Park Marina, the Haggin Oaks Golf Complex, and the Bing Maloney Golf Complex to ascertain whether the staff have been able to make recommended changes. If not, SWPPPs may need to be developed for these facilities.

In addition, Stormwater Program staff will continue implementing other municipal program BMPs intended to reduce potential pollutant discharges from City facilities and activities not specifically addressed by this permit provision (10.C.i.). Other BMPs include training of municipal staff, revision of facility lease language where necessary, revision of special use permits where necessary, review of pesticide use and application procedures, and review of good housekeeping procedures.

ATTACHMENTS

Attachment A - Master Table

Attachment B - Individual Facility Review Forms

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS					
Facility and Location	Contact Name and Phone No.	Use	Site Visit	Status and Recommendation	
Drainage to MS4, Creek, and/or River					
Sacramento River Water Treat Plant 101 Bercut Drive	Stephen Willey Plant Supervisor 808-7406	Chemical storage	Y	See review form No SWPPP necessary	
E. A. Fairbairn Water Treatment Plant 7501 College Town Drive		Chemical storage	Y	See review form No SWPPP necessary	
Sacramento Army Depot 8300 Fruitridge Rd.		Leased for business park	N	Not a City operation No SWPPP necessary	
24th Street Corp Yard 5730 24th Street	Robert Summersett Fleet Management Superintendent 433-6309	Materials storage, vehicle maintenance, corporation yard	N	Has a SWPPP	
Meadowview Corp Yard 2812 Meadowview Rd		Materials storage, vehicle maintenance, corporation yard	N	Has a SWPPP	
North Area Corp. Yard Kenmar & Del Paso Blvd		Materials storage, vehicle maintenance, corporation yard	N	Will open in summer 2004 Will need a SWPPP	
Combined Wastewater Treatment Plant 1391 35 th Avenue	David Phillips Wastewater Superintendent 808-5652	Some equipment maintenance, wash rack	Y	See review form Has SPCCC SWPPP required under stormwater regulations	
Miller Park Marina 2700 Front Street	Michelle Heppner Marina Manager 264-5712	Fuel and wastewater storage	Y	Review form available No SWPPP necessary w/some changes at the facility	

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS						
Facility and Location	Contact Name and Phone No.	Use	Site Visit	Status and Recommendation		
Police Annex Fleet Maintenance Shop 625 H Street	Robert Summersett Fleet Management Superintendent 433-6309	Chemical/fuel storage, vehicle maintenance	N	Will close in 2004 - move to new North Area Corp. Yard		
Kinney Garage Facility 3550 Marysville Blvd		Chemical/fuel storage, vehicle maintenance	Y	No SWPPP necessary See review form		
Rooney Garage Facility 5303 Franklin Blvd.	Laura Fisher Risk Management Safety Specialist 433-2276	Chemical/fuel storage, vehicle maintenance	Y	See review form		
Eleanor Yard Garage 805 Eleanor Avenue		Chemical/fuel storage, vehicle maintenance	N	No SWPPP necessary Will close in 2004 - move to new North Area Corp. Yard		
Fire Station # 01 624 Q Street	Laura Fisher Risk Management Safety Specialist 433-2276	Fuel storage	N	No SWPPP necessary		
Fire Station # 02 1229 I Street		Fuel storage		Will have Haz Mat Plan or SPCC by July 2004 that covers storm drain protection		
Fire Station # 03 7208 West Elkhorn Blvd.		Fuel storage	N	No SWPPP necessary		
Fire Station # 07 6500 Wyndham Drive		Fuel storage	N	Will have Haz Mat Plan or SPCC by July 2004 that covers storm drain protection		
Fire Station # 08 5990 H street		Fuel storage	N	No SWPPP necessary		
				Will have Haz Mat Plan or SPCC by July 2004 that covers storm drain protection		
				No SWPPP necessary		

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS					
Facility and Location	Contact Name and Phone No.	Use	Site	Status and Recommendation	
			Visit		
Fire Station # 09 5801 Florin Perkins Rd.		Fuel storage	N	Will have Haz Mat Plan or SPCC by July 2004 that covers storm drain protection	
				No SWPPP necessary	
Fire Station # 16 7363 24th Street		Fuel storage	N	Will have Haz Mat Plan or SPCC by July 2004 that covers storm drain protection	
				No SWPPP necessary	
Fire Station # 19 1700 Challenge Way		Fuel storage	N	Haz Mat Plan covers storm drain protection	
				No SWPPP necessary	
Fire Station # 20 300 Arden Way		Fuel storage	N	Will have Haz Mat Plan or SPCC by July 2004 that covers storm drain protection	
				No SWPPP necessary	
Fire Station # 52 9780 Elder Creek Rd		Fuel storage	N	Will have Haz Mat Plan or SPCC by July 2004 that covers storm drain protection	
				No SWPPP necessary	
Old Sac Storage Building Under I-5 freeway	Cindy Stevens 264-7031	Stores street decorations	N	No SWPPP necessary	
Old Sac Trash Enclosure No. 1 and No. 2 2nd Street Alley		Trash compactor units	N	No SWPPP necessary	
E. Portal Park Bolla Barn & Storage Shed	Bill Hall Parks Supervisor, No. Sacramento	Indoor storage irrigation and power equipment	N	No SWPPP necessary	
Rodeo Way Softball Complex Maintenance Bldg.	566-6494	Indoor storage maintenance eqpt. Outdoor, tarped storage bagged fertilizer on raised pallets	N	No SWPPP necessary	
3150 Longview Dr. Hagginwood Park Storage Bldg.		Indoor storage wood, occasional bag fertilizer	N	No SWPPP necessary	
Marysville Blvd					

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS					
Facility and Location	Contact Name and Phone No.	Use	Site Visit	Status and Recommendation	
Tahoe Pool, Wading Pool & Pool Bldg	Greg Narrowmore Aquatics Division Superintendent	Chemical storage	N	See review form	
63rd Street				No SWPPP necessary	
Fullertown Swimming Pool	277-6095	Chemical storage	N	See review form	
Job Corp Center Pool		Chemical storage	N	No SWPPP necessary	
				See review form	
Kennedy High Pool		Chemical storage	N	No SWPPP necessary	
				See review form	
Sacramento High Pool		Chemical storage	N	No SWPPP necessary	
				See review form	
Ciunie Pool, Wading Pool & Pool Bldg		Chemical storage	N	No SWPPP necessary	
				See review form	
Cabrillo Pool & Pool Bldg		Chemical storage	N	No SWPPP necessary	
67th Street				See review form	
Glen Hall Pool & Pool Bldg		Chemical storage	N	No SWPPP necessary	
Sandburg Dr				See review form	
Mangan Pool & Pool Bldg		Chemical storage	N	No SWPPP necessary	
34th Ave.				See review form	
Hagginwood Wading Pool		Chemical storage	N	No SWPPP necessary	
Marysville Blvd				See review form	
Grant Pool		Chemical storage	N	No SWPPP necessary	
21st Street				See review form	
Johnston Pool & Pool Bldg		Chemical storage	N	No SWPPP necessary	
Eleanor Ave.				See review form	
Sim Pool & Pool Bldg		Chemical storage	N	No SWPPP necessary	
Logan Street				See review form	
Northgate Park Wading Pool		Chemical storage	N	No SWPPP necessary	
Brewerton Dr				See review form	

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS						
Facility and Location	Contact Name and Phone No.	Use	Site Visit	Status and Recommendation		
Henschel Park Wading Pool 45th Street		Chemical storage	N	No SWPPP necessary See review form		
Hopkins Park Wading Pool Matson Dr		Chemical storage	N	No SWPPP necessary See review form		
Colonial Park Wading Pool 54th Street		Chemical storage	N	No SWPPP necessary See review form		
Gardenland Wading Pool Bowman Ave.		Chemical storage	N	No SWPPP necessary See review form		
Mama Marks Wading Pool Roanoke Way		Chemical storage	N	No SWPPP necessary See review form		
Doyle Pool & Pool Bldg		Chemical storage	N	No SWPPP necessary See review form		
Oki Pool & Pool Bldg Wisseman		Chemical storage	N	No SWPPP necessary		
Alister MacKenzie/Haggin Oaks Golf 3645 Fulton Avenue	Sam Samuelson Golf Course Superintendent 932-6680	Chemical/fuel storage, vehicle maintenance	Y	See review form Has SPCC that covers storm drain protection No SWPPP necessary w/some changes at the facility		
Bing Maloney Golf 6801 Freeport Blvd.	Shane Howe Golf Course Superintendent 433-6354	Chemical/fuel storage, vehicle maintenance	Y	See review form Has SPCC that covers storm drain protection No SWPPP necessary w/some changes at the facility		
Cavanaugh Golf 8325 River Road	Campbell Turner Golf Course Superintendent 433-6297	Chemical/fuel storage, vehicle maintenance	Y	See review form Has Haz Mat Plan that covers storm drain protection No SWPPP necessary		

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS						
Facility and Location	Contact Name and Phone No.	Use	Site Visit	Status and Recommendation		
Utilities Sump 1A	William Miller	Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
U St. @ Front St.	Senior Mechanical Engineer					
Utilities Sump 2A	808-1705	Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
3530 Riverside						
Utilities Sump 11		Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
Natomas Blvd/N. Park Dr						
Utilities Sump 28		Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
7788 Freeport Blvd						
Utilities Sump 34		Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
7851 Freeport Blvd						
Utilities Sump 55		Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
6203 Gloria Dr						
Utilities Sump 101		Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
5701 Elvas Ave						
Utilities Sump 128		Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
3951 Mack Rd						
Utilities Sump 132		Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
7520 Pocket Rd						
Utilities Sump 137		Fuel storage	N	Will have Spill Prevention Plan summer 2004-spill resp. & containment, sump operation, inspection		
8117 Rush River Dr						

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS					
Facility and Location	Contact Name and Phone No.	Use	Site Visit	Status and Recommendation	
Utilities Sump 140		Fuel storage	N	Will have Spill Prevention Plan summer 2004- spill resp. & containment, sump operation, inspection	
181 Pinedale Ave					
Utilities Sump 151		Fuel storage	N	Will have Spill Prevention Plan summer 2004- spill resp. & containment, sump operation, inspection	
600 Leisure Ln					
Utilities Sump 152		Fuel storage	N	Will have Spill Prevention Plan summer 2004- spill resp. & containment, sump operation, inspection	
Tribute Rd CalExpo Parking					
Utilities Sump 160		Fuel storage	N	Will have Spill Prevention Plan summer 2004- spill resp. & containment, sump operation, inspection	
Shorebird @ Kittywake Dr					
Drainage to CSS					
28th Street Corp Yard - Sutter's Landing	Robert Summerseft Fleet Management Superintendent	Materials storage, vehicle maintenance, corporation yard			
28th & A	433-6309				
Miller Park Corp Yard Building					
Front Street					
Miller Park Tree Dept. & Chem Storage					
Front Street					
Miller Park Police Equestrian					
Front Street					
Sacramento Zoo	Jim Schnomeier Curator		Y	Review form available	
3930 West Land Park Drive	264-7381				

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS					
Facility and Location	Contact Name and Phone No.	Use	Site Visit	Status and Recommendation	
Animal Shelter	Kathy Vos		Y	Review form available	
2127 Front Street	Chief Animal Care Officer 808-5855				
Drill Tower	Laura Fisher				
3230 J Street	Risk Management Safety Specialist 433-2276				
Fire Station # 06		Fuel storage			
3301 Martin Luther King Blvd.					
FairyTale Town Barn Tool Shed					
3901 Land Park Dr.					
FairyTale Town Lama House					
3901 Land Park Dr.					
Land Park Pony Barn					
Sutcliffe & Freeport					
Land Park Corp Yard Maintenance Bldg.					
18th Street between 14th & 15 th					
Land Park Maintenance Hay Barn					
Sutcliffe & Freeport					
Land Park Storage By Tiny Tot					
Sutcliffe & Freeport					
Garden & Arts Center					
3200 H Street					
McKinley Park Storage Bldg					
3200 H Street					
Southside Park Storage 6th Street					

CITY OF SACRAMENTO FACILITIES - VEHICLE MAINTENANCE FACILITY, MATERIALS STORAGE FACILITY, AND CORPORATION YARDS					
Facility and Location	Contact Name and Phone No.	Use	Site Visit	Status and Recommendation	
Land Park Wading Pool	Greg Narrowmore Aquatics Division Superintendent 277-6095				
Suttenville & Freeport					
Southside Pool & Pool Bldg					
6th Street					
McClatchy Pool, Wading Pool & Bldg					
33rd Street					
Land Park Golf		Note: a small portion of the course drains to the storm drainage system			
Suttenville and Freeport					

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: Combined Wastewater Treatment Plant

Address: 1391 35th Avenue

Contact Name and Title: Dave Phillips, Wastewater Superintendent

Phone Number: 916-808-5652

Contact Name and Title: Bruce Baker, Supervising Plant Operator

Phone Number: 916-808-5651

Nature of the Operation: Wastewater retention and treatment facility for combined sewer system.

The Combined Wastewater Treatment Plant is part of the City of Sacramento Department of Utilities.

Stormwater runoff from selected areas of the Combined Wastewater Treatment Plant discharges to the Sacramento River via Sump 104. Runoff to the storm drain is principally from areas such as roofs, parking lots, and landscaped areas. There is also some runoff from areas used for outdoor maintenance and storage of large pieces of equipment.

Relevant Activities

Chemical Storage –

There is outside tank storage of sodium hypochlorite and sodium bisulfite. These tanks are surrounded by berms rated to contain the full contents of a tank. Oil storage is in double walled tanks. The plant has a Spill Control and Countermeasure Plan that covers response to chemical spills.

Vehicle Maintenance/Corps Yard Activities –

There is no vehicle maintenance onsite. There is pump and equipment maintenance, most of which is conducted inside, under cover. Some outside maintenance is done on large pieces of equipment. There is a cleaning rack for equipment – the cleaning rack area is not bermed but does drain to the sanitary sewer. The cleaning rack was not in use, so its effectiveness in containing the wash water to the sanitary system drain was not observed.

Other –

When in use, the three bays of rectangular clarifiers release wastewater back to the sanitary sewer system. Under certain storm conditions, the discharge is treated and directed to the Sacramento River – this discharge is covered under NPDES Permit No. CA0079111, Regional Board Order No. 5-01-258.

A March 11, 2003 site inspection made by a Regional Board contractor, Tetra Tech, pursuant to this NPDES permit, reported that the physical condition of the site showed evidence of good housekeeping practices and maintenance.

Recommendation

The areas that discharge to the storm drain system are mostly limited to non-industrial uses. The principal exception is that some outside maintenance is conducted on large equipment. Although the activities in areas that discharge to the storm drain system appear to be quite limited, this is a type of facility that is specified as requiring coverage under the State General Industrial Stormwater Permit. Therefore, it is recommended that the need for a SWPPP to address storm drainage exposure and pollution prevention be specifically discussed with Regional Board staff and addressed and incorporated, as appropriate, into the existing NPDES Permit, which is approaching its renewal period.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: Sacramento Marina

Address: 2710 Ramp Way

Contact Name and Title: Michelle Heppner, Marina Manager

Frank Malaki

Phone Number: 916-264-5712

Nature of the Operation: Provide boating amenities including berthing, launching, fueling, and pumpout facilities. No boat maintenance services are provided.

The Sacramento Marina is part of the City of Sacramento Department of Convention, Culture and Leisure

The Sacramento Marina is located on an off-stream basin of the Sacramento River.

Drainage from the docks, slips, fueling and pumpout dock, and launch ramp is directly into the river.

Relevant Activities

Fueling and Pumpout –

Fuel and pumpout lines between the dock and onshore storage tanks are double-sleeved. A third sleeve was also on the lines but was not completely connected and water tight.

Materials Storage –

Storage of chemicals is inside – either at the administration building or at the fuel dock.

Spill Management –

The Marina has a Consolidated Contingency Plan that lists emergency spill response procedures for Marina employees. The Plan specifies that employee training is conducted for new hires and annually for all Marina staff. The Marina contracts spill cleanup to Ramos Environmental. Typical spill management techniques are to contain a spill with booms and then deploy absorbent pads.

Recommendations

The potential for contamination at the Marina is principally with respect to the potential for spills. Since the Marina has a Plan that contains spill response and cleanup procedures, a separate Stormwater Pollution Prevention Plan is not recommended. It is recommended that the Marina ensure that the Plan is kept up to date and that the employee training is conducted as described in the Plan. It is further recommended that the Marina keep the third sleeve on the fuel and pumpout lines connected and water tight.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: Haggin Oaks Golf Complex

Address: 3645 Fulton Avenue

Contact Name and Title: Sam Samuelson, Golf Course Superintendent

Phone Number: 916-277-6034

Nature of the Operation: Arcade Creek and Alistair MacKenzie 18-hole golf courses. The Haggin Oaks Golf Complex is part of the City of Sacramento Capital City Golf. Stormwater runoff from the Haggin Oaks Golf Complex discharges to Arcade Creek.

Relevant Activities

Chemical Storage –

Pesticide storage is inside in a dedicated raised bed trailer. This trailer has a grated floor providing secondary containment for any pesticides that spill inside the trailer. Cleaning procedures for the under-grate area are not known. Mixing of pesticides and loading into the spray rig is done inside under cover.

Fertilizer storage is inside – bagged fertilizer is stored on pallets. The floor is swept, not hosed.

Janitorial supplies are stored inside.

Drummed oil is stored inside – there is a poly spill pallet providing secondary containment under the drums.

There are two aboveground fuel tanks, one owned by the City and one by Morton Golf – these tanks are double-walled and inspected monthly.

The golf course has a fertigation system that provides a means for tank injection of fertilizers into the irrigation system. This system is used when establishing a course, but is not used for ongoing maintenance. The fertigation system now stands empty.

Vehicle Maintenance –

Maintenance and washing of turf maintenance equipment is conducted by the City of Sacramento. Golf cart maintenance and washing is not under the direct control of the City of Sacramento; it is part of the golf operation that is leased as a concession to Morton Golf.

Turf maintenance equipment – Most maintenance activities are conducted under cover, inside a maintenance building. Some maintenance is done outside on large equipment. Oil and fluid drippings are picked up with absorbents. The floor of the maintenance building is periodically swept, but is not hosed down.

There is a wash rack, under cover, that drains to the sanitary sewer system. This has a filter system that clogs due to grass clippings. Most vehicle wash off is to cleanse grass and mud. Therefore, the wash rack is infrequently used and equipment washing is done in two turfed “swale” areas on the course. A new self-contained wash rack is under consideration.

Golf carts – Cart maintenance (battery operated carts) is done outside. The City is currently discussing additional facilities so these maintenance operations would be under cover. Cart washing is also done outside. Cart storage and cart supplies are under cover in a cart barn.

Spill Response –

City staff receives annual training on pesticide use, fuel spills and dispensing, and shop cleanliness.

There are spill kits with absorbent materials, mats to seal drains, and other spill response supplies.

A newly completed (1/15/04) Spill Prevention Control and Countermeasure (SPCC) Plan was prepared for the Haggin Oaks Golf Complex by Kennedy/Jenks Consultants.

Recommendation

The potential for stormwater contamination at this facility is mostly associated with the potential for spills, which is addressed through secondary containment/double walled tanks, procedures outlined in the SPCC Plan, employee training, and the availability of spill kits. Vehicle wash off is a relatively benign activity consisting of hosing mud and grass clippings off vehicles onto turfed areas on the course. There are three recommendations for additional measures that should be developed and implemented, namely: (1) cleaning procedures for the pesticide trailer, (2) cleanup of the ground surface (as necessary) following outside maintenance activities, and (3) arranging the training schedule so that training for the specific activities listed above occurs coincident with the onset of the rain season as much as is possible.

A Stormwater Pollution Prevention Plan is not recommended if the above three recommendations are addressed and incorporated into existing procedures.

It is preferable, as the City budget allows, to provide facilities so that all vehicle maintenance (large equipment and golf carts) can be done under cover and to provide functioning wash racks.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: Bing Maloney Golf Complex

Address: 6801 Freeport Blvd.

Contact Name and Title: Shane Howe, Golf Course Superintendent

Phone Number: 916-433-6354

Nature of the Operation: Bing Maloney 18-hole and executive 9-hole golf courses. The Bing Maloney Golf Complex is part of the City of Sacramento Capital City Golf. Stormwater runoff from the Bing Maloney Golf Complex is mostly sheet runoff that eventually discharges to the MS4.

Relevant Activities

Chemical Storage –

Pesticide storage is inside in a dedicated raised bed trailer. This trailer has a grated floor providing secondary containment for any pesticides that spill inside the trailer. Cleaning procedures for the under-grate area are not known. Mixing of pesticides and loading into the spray rig is done inside under cover. Mixing of pesticides and loading into the spray rig is done outside. A new self-contained wash rack is under consideration. If installed, pesticide mixing will be done in the wash rack. The spray rig is stored inside.

Fertilizer storage is inside – bagged fertilizer is stored on pallets. The floor is swept, not hosed.

Janitorial supplies are stored inside.

Drummed oil is stored inside – there is a poly spill pallet providing secondary containment under the drums.

There are two aboveground fuel tanks – these tanks are double-walled and inspected monthly.

Vehicle Maintenance –

Maintenance and washing of turf maintenance equipment is conducted by the City of Sacramento. Golf cart maintenance and washing is not under the direct control of the City of Sacramento; it is part of the golf operation that is leased as a concession to Morton Golf.

Turf maintenance equipment – Most maintenance activities are conducted under cover, inside a maintenance building. Some maintenance is done outside – on the larger machines. Oil and fluid drippings are picked up with absorbents. The floor of the maintenance building is periodically swept, but is not hosed down.

There is no wash rack. Therefore, equipment washing is done in a turfed area on the course. Most vehicle wash off is to cleanse grass and mud. A new self-contained wash rack is under consideration.

Golf carts – Cart maintenance (gas powered carts) is done inside. The City is currently discussing conversion to battery operated carts and additional cart facilities. Cart washing is also done outside. Cart storage is mostly outside.

Spill Response –

City staff receives annual training on pesticide use, fuel spills and dispensing, and shop cleanliness.

There are spill kits with absorbent materials, mats to seal drains, and other spill response supplies.

A newly completed (1/15/04) Spill Prevention Control and Countermeasure (SPCC) Plan was prepared for the Haggin Oaks Golf Complex by Kennedy/Jenks Consultants.

Recommendation

The potential for stormwater contamination at this facility is mostly associated with the potential for spills, which is addressed through secondary containment/double walled tanks, procedures outlined in the SPCC Plan, employee training, and the availability of spill kits. Vehicle wash off is a relatively benign activity consisting of hosing mud and grass clippings off vehicles onto turfed areas on the course. There are four recommendations for additional measures that should be developed and implemented, namely: (1) providing an inside space for mixing and loading of the pesticide spray rig, (2) cleaning procedures for the pesticide trailer, (3) cleanup of the ground surface (as necessary) following outside maintenance activities, and (4) arranging the training schedule so that training for the specific activities listed above occurs coincident with the onset of the rain season as much as is possible.

A Stormwater Pollution Prevention Plan is not recommended if the above four recommendations are addressed and incorporated into existing procedures.

It is preferable, as the City budget allows, to provide facilities so that all vehicle maintenance (large equipment) can be done under cover and to provide a wash rack.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: Bartley Cavanaugh Golf Course
Address: Freeport Blvd
Contact Name and Title: Campbell Turner, Golf Course Superintendent
Phone Number: 916-433-6297

Nature of the Operation: Bartley Cavanaugh 18-hole golf course.
The Bartley Cavanaugh Golf Course is part of the City of Sacramento Capital City Golf.
Stormwater runoff from the Bartley Cavanaugh Golf Course discharges to a drainage ditch on the north side of the facility. Eventual discharge is to the Sacramento River.

Relevant Activities

Chemical Storage –

Pesticide storage is inside in a dedicated room. This room is bermed – any pesticides that spill are contained within the berm. Cleaning procedures for the floor include sweeping and pick up or pickup with absorbents – no hosing is done. Mixing of pesticides and loading into the spray rig is done under the wash rack cover.

Fertilizer storage is inside – bagged fertilizer is stored on pallets. The floor is swept, not hosed.

Janitorial supplies are stored inside.

Drummed oil is stored inside on poly spill pallets. There are spill kits with absorbent materials to pick up spills and drips. This building drains to the septic system.

There is a single aboveground fuel tank – this tank has secondary containment.

The golf course has a fertigation system that provides a means for tank injection of fertilizers into the irrigation system. This system is used when establishing a course, but is not used for ongoing maintenance. The fertigation system now stands empty.

Vehicle Maintenance –

Maintenance and washing of turf maintenance equipment is conducted by the City of Sacramento. Golf cart maintenance is not under the direct control of the City of Sacramento; it is part of the golf operation that is leased as a concession to Morton Golf.

Turf maintenance equipment – Maintenance activities are conducted under cover, inside a maintenance building. Oil and fluid drippings are picked up with absorbents. The floor of the maintenance building is periodically swept, but is not hosed down. This building drains to the septic system.

There is a wash rack, under cover, that drains to the septic system. Wash off of heavy grass clippings and mud is done outside in a turfed area.

Golf carts – Cart maintenance (battery operated carts) is done inside. Cart storage and cart supplies are under cover.

Current Training –

City staff receives annual training on pesticide use, fuel spills and dispensing, and shop cleanliness.

The septic tank is set to alarm before it reaches capacity.

Recommendation

No Stormwater Pollution Prevention Plan is necessary.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: Kinney Police Facility

Address: 3550 Marysville Blvd.

Contact Name and Title: James Chapman, Equipment Maintenance Supervisor

Phone Number: 916-566-6477

Nature of the Operation: Maintain City police vehicles.

The Kinney Police Facility garage is part of the City of Sacramento Department of Public Works.

Stormwater runoff from the Kinney Police facility discharges to the MS4.

Relevant Activities

Chemical Storage --

Fuel storage is in underground tanks. The fueling station is under cover.

Oil, batteries, and other chemicals used in vehicle maintenance are stored inside.

Vehicle Maintenance --

Vehicle maintenance is done inside. Occasionally, vehicles too large to fit inside are serviced just outside the bay door. The vehicle maintenance building and immediate area drains to an oil water separator and then to the sanitary sewer.

The wash rack drains to the sanitary sewer.

There are spill kits onsite and spill response is discussed at quarterly safety meetings.

Recommendation

No Stormwater Pollution Prevention Plan is necessary.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: Rooney Police Facility

Address: 5303 Franklin Blvd.

Contact Name and Title: Robert Olsen, Equipment Maintenance Supervisor

Phone Number: 916-277-6010

Nature of the Operation: Maintain City police vehicles.

The Rooney Police Facility garage is part of the City of Sacramento Department of Public Works.

Stormwater runoff from the Rooney Police facility discharges to the MS4.

Relevant Activities

Chemical Storage —

Fuel storage is in underground tanks. The fueling station is under cover.

Oil, batteries, and other chemicals used in vehicle maintenance are stored inside.

Vehicle Maintenance —

Vehicle maintenance is done inside. Occasionally, vehicles too large to fit inside are serviced just outside the bay door. The vehicle maintenance building and immediate area drains to an oil water separator and then to the sanitary sewer.

The wash rack drains to the sanitary sewer.

There are spill kits onsite and spill response is discussed at quarterly safety meetings.

Recommendation

No Stormwater Pollution Prevention Plan is necessary.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: E. A. Fairbairn Water Treatment Plant

Address: 7501 College Town Drive

Contact Name and Title: Stephen Willey, Plant Supervisor - Operations

Phone Number: 916-808-7406

Nature of the Operation: Conventional water treatment plant.

The E. A. Fairbairn Water Treatment Plant is part of the City of Sacramento Department of Utilities.

Stormwater runoff from the E. A. Fairbairn River Water Treatment Plant discharges to the City of Sacramento storm drainage system (Sump 91) and thence to the American River.

Relevant Activities

Chemical Storage –

The E. A. Fairbairn Water Treatment Plant is currently under construction to complete a plant expansion project. Construction is expected to be completed by the end of 2004 or early 2005. The construction includes new chemical storage buildings for inside storage of all chemicals. The inside storage areas will have containment areas and/or drainage to the sanitary sewer. The plant has an Emergency Management Plan that covers response to hazardous materials spills.

Runoff to the storm drain will be from areas such as roofs, parking lots, and landscaped areas.

Recommendation

No Stormwater Pollution Prevention Plan is necessary.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: Sacramento River Water Treatment Plant

Address: 1 Water Street

Contact Name and Title: Stephen Willey, Plant Supervisor - Operations

Phone Number: 916-808-7406

Nature of the Operation: Conventional water treatment plant.

The Sacramento River Water Treatment Plant is part of the City of Sacramento Department of Utilities.

Stormwater runoff from the Sacramento River Water Treatment Plant discharges to the Sacramento River.

Relevant Activities

Chemical Storage —

There is a dedicated chemical storage building that houses chlorine, fluoride, and other chemicals inside. The inside storage areas have containment and/or drainage to the sanitary sewer system. There is outside tank storage of caustic soda, polymer, and lime. These tanks are surrounded by berms and containment areas. The plant has an Emergency Management Plan that covers response to hazardous materials spills.

Runoff to the storm drain is from areas such as roofs, parking lots, and landscaped areas.

Recommendation

No Stormwater Pollution Prevention Plan is necessary.

CITY OF SACRAMENTO FACILITIES - STORMWATER REVIEW FORM

Facility Name: City Pools and Fountains

Address: various – see master list for pools, fountain locations are listed below

Contact Name and Title: Greg Narrowmore, Community Recreation Services and Aquatics Division Superintendent

Phone Number: 916-277-6095

Nature of the Operation: Disinfection and pH control of City pools and fountains

The Community Recreation Services and Aquatics Division is part of the City of Sacramento Department of Parks and Recreation.

Some City pools and fountains are in the storm drainage system area and some are in the combined sewer system area – see master table for pool locations.

Relevant Activities

Chemical Storage –

For disinfection, the City uses either liquid sodium hypochlorite or liquid or gaseous chlorine. For pH control, liquid muratic acid or liquid sodium hydroxide are used. Two to three carboys of liquid chemicals are delivered and placed by an outside vendor on containment pallets that are rated to contain up to 55 gallons of liquid. The different chemicals are stored separately on different pallets. One pool location (the Meadowview pool) has bulk storage onsite – this bulk storage is within a secondary containment area. Where chlorine gas is used, the cylinders are housed inside.

The City is in the process of revising its Risk Management Plan for the pool chemicals. This plan addresses potential contaminant pathways to the storm drain system. The area around the pools and chemical storage areas drains to the sanitary sewer.

At areas where there are public fountains (Caesar Chavez Park, Fremont Park, and Gardenland), the chemicals are located in covered and sealed units. These units have secondary containment.

Note: When drained for O&M, pool water is discharged to the sanitary sewer system.

Recommendation

No Stormwater Pollution Prevention Plan is necessary.

CITY OF SACRAMENTO
28th Street Landfill
(Closed)

STORM WATER POLLUTION PREVENTION PLAN

Prepared by: Roxanne Livingston, Assistant Civil Engineer
Engineering Services – Water Quality Section
And
Matt Rodgers, P.E., Consultant

September 2007

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Appendix A – Sample Collection and Analysis Plan

Appendix B – Site Map

1.0 INTRODUCTION

The National Pollution Discharge Elimination System (NPDES) Storm Water Permit, administered by the Central Valley Regional Water Quality Control Board (Water Board), requires the City of Sacramento to regulate urban runoff entering into the storm drainage system and local waterways. The purpose of the permit is to protect water quality by reducing the amount of pollutants in the storm water from various urban land uses and activities. There are numerous programs being implemented by the City's Stormwater Quality Improvement Program (Stormwater Program) including those that minimize storm water pollution from new developments, construction sites, and industrial facilities. The City of Sacramento has obtained a General NPDES permit which covers the majority of the City's municipal activities and facilities, but section 402(p) of the Federal clean Water Act requires landfills (both open and closed) to obtain separate coverage. On March 19, 2004, the City Landfill facility obtained a State Industrial Storm Water General Permit, NPDES Order Number R5-2004-0039, from the California Regional Water Quality Control Board, Central Valley Region.

1.1 Purpose of the Storm Water Pollution Prevention Plan (SWPPP)

The SWPPP provides an extensive evaluation of the Landfill for potential activities that may result in storm-water-pollutant runoff. The SWPPP is intended to serve as a blue print for implementation of best management practices (BMPs) to control pollutants within the site's runoff. All paved areas where the corporation yard and the western portion of the pervious areas drain into the combined sewer/stormwater system; furthermore, the south west portion of the pervious area drains to the south where it is retained in a detention pond for sedimentation prior to discharging into the combined sewer/stormwater system. Additionally, the south eastern portion of the pervious area drains to a retention pond located in the furthest, south east corner of the landfill where the runoff infiltrates into the soil. The activities and potential pollutants from within these areas are generally discussed in the SWPPP, but no BMP implementation practices are required under this SWPPP since runoff from these locations do not impact local water bodies; however, discharges into the combined system are mitigated so as to not impact any existing agreements with the Sacramento Regional Sanitation District where wastewater from this facility is treated prior to discharging into the Sacramento River. This SWPPP will be kept on the premises and updated as needed to reflect actual procedures. The Stormwater Program staff will also have a copy of this SWPPP.

1.2 Storm Water Audit at the Landfill

A storm water audit was conducted at the 28th St. Landfill by Stormwater Staff from the Department of Utilities/Engineering Services; audit personnel include, Connie Perkins, Associate Civil Engineer, and Roxanne Livingston, Assistant Civil Engineer. The audit addressed the following areas: activities performed at the corporation yard, materials used and stored inside and outside, equipment and vehicles stored inside and outside, cleaning areas and wash racks, landfill activities, and general comments.

1.3 Responsible Staff

The SWPPP requires identifying personnel to oversee the implementation of any measures to reduce pollution and to modify the SWPPP as necessary over time. The Landfill staff will be responsible for implementing and maintaining storm water BMPs.

1.4 Updating the SWPPP

→ AT LEAST ONCE PER PERMIT TERM

The SWPPP will be updated on a regular basis to reflect changes in activities that may adversely affect or improve storm water runoff. Any changes to the SWPPP shall include John Olesen, Senior Landfill Engineering Technician, and Stormwater Program Staff. Other Landfill Managers and Safety Office staff can also be involved with updates to the SWPPP.

2.0 SITE LOCATION, GENERAL ENVIRONS, AND ACTIVITIES

The City of Sacramento owns and operates the 28th Street Landfill, a closed Class III landfill, located at the northern end of 28th Street in downtown Sacramento. This chapter contains background information about the landfill, surroundings, and all activities and material storage observed during the site audit.

2.1 Background Information about the 28th St. Landfill

Prior to closure, the landfill was permitted to accept up to 1,200 tons of waste per day. It was estimated that actual waste acceptance was approximately 600 tons of waste per day with the facility operating 5 ½ days per week. The total capacity of the landfill, at final closure, was estimated to be 6,514,000 cubic yards. It is assumed that this applies only to the known waste disposal operations in Waste Management Units (WMU)s A and B.

The landfill was used for disposal of non-hazardous residential, commercial and industrial wastes, primarily collected by the City of Sacramento waste collection services. Most of the waste comes from residential refuse collection vehicles, yard waste collection operations, street sweeping, and other miscellaneous City activities. No commercial haulers or self-haul vehicles are allowed to dispose at the site. Since the beginning of fill operations at this site, the waste stream has been uniform in nature and composition. This has resulted in a very homogenous cross-section for wastes throughout the landfill.

Hazardous wastes and liquid wastes have never been knowingly accepted at the landfill. However, typical early (pre-1980s) disposal procedures did not routinely check incoming wastes closely for liquids and/or hazardous wastes. In addition, all municipal wastes contain some portion of household hazardous wastes, mixed in with the non-hazardous garbage, including used oils, paints, lead-acid batteries, pesticides, etc. An assessment conducted in 1985 of the types and quantities of household hazardous waste in materials accepted at the facility found that less than 0.12% of the total waste stream was categorized as household hazardous waste.

The disposal areas consist of two classified landfill units, and three older, unclassified fill areas. Descriptions of these disposal areas are as follows:

Classified Units

- A 79.5-acre area known as WMU A. This area was filled from 1971 until 1986. This cell was constructed without a base liner or leachate collection system, which were not required by regulations at the time. A final cover system was installed in phases and was completed in 1997. The cover consists of one foot of intermediate cover soil over the waste materials, overlain by two feet of concrete and asphalt rubble, overlain by one foot of low-permeability clay, overlain by a one-foot vegetative soil layer.
- A 27.5-acre area, known as WMU B. This area was filled from 1986 until 1994. This cell was constructed with a base liner and leachate collection and removal system. The base liner consists of 1.5 feet of compacted soil/bentonite mix with a maximum permeability of 1×10^{-7} cm/s, overlain by an additional 1.5 feet of native compacted soil with permeability ranging between 1×10^{-8} and 1×10^{-7} cm/s. A final cover system was completed at WMU B in September 1997. The final cover profile is identical to that described above for WMU A.

Unclassified Disposal Areas (filled during the period 1963 through 1971)

- Area A: Approximately 12.5-acre, unpaved area west of 28th Street was graded to a minimum 3% slope and covered with, from top to bottom, two-feet of soil cover, 6 inches of asphalt street grindings, two-feet of concrete and asphalt rubble, and 6 inches of soil cover.
- Area B: Approximately 10-acres west of 28th Street was covered with, from top to bottom, 3 inches of asphalt concrete (to provide an all weather surface and prevent infiltration of water), 6 inches of asphalt street grindings, two-feet of concrete and asphalt rubble, and one-foot of soil paved with asphalt concrete.
- Area C: Approximately 16 paved acres north of 28th Street was covered in the same manner as the 10-acre section listed above.

As part of closure, the landfill was graded to prevent ponding of water, and a drainage system was installed. Areas of differential settlement are periodically re-graded to maintain proper drainage. Landfill runoff drains by sheet flow over the side slopes and is routed through V-ditches that are lined with low permeability clay and extends to detention basins before the surface runoff leaves the site. The detention basin in the northeast corner discharges into the American River, and the southwest detention basin discharges to the combined sewer system. Locations of these detention basins are shown in Appendix B. The cover and drainage improvements act to prevent or minimize the infiltration of water into waste.

2.2 General Nature of Facility Activities

The vicinity north of 28th Street is now one of the City's corporation yards and is used for:

- Storage; both indoor and outdoor
- Vehicle parking
- Vehicle & Equipment Washing
- Preventative maintenance of City vehicles
- Facility offices

The City Department of Parks and Recreation has also developed small portions of this area as the Sutter's Landing Park which includes such activities as:

- Pedestrian/bike trails
- Paved parking
- Picnic areas
- Skate-park area.

The former compost area and uncovered area west of 28th Street are not currently being used. Many areas of the landfill are now controlled by the City Department of Parks and Recreation, which is considering the areas for incorporation into Sutter's Landing Park.

The City Department of Utilities, Solid Waste Division performs various activities to mitigate pollutants from the covered landfill from impacting the environment. These activities include:

- Pumping of groundwater from groundwater extraction wells
- Pumping and monitoring of leachate from a leachate collection and recovery system
- Monitoring of groundwater from nineteen water quality monitoring wells
- Operation and maintenance of a landfill gas collection system

2.3 Map of General Area

A map of 28th St. Landfill and the immediate surroundings is shown in Appendix B. The City landfill occupies 172 acres and is approximately 15% impervious. The general environs include: the American River to the north; Capital City Freeway to the south; Southern Pacific Railroad tracks to the east; and industrial properties to the west. The site also includes approximately 18 acres of non-filled areas including levees and a buffer area between the landfill and the American River, a storm water retention area east of the landfill, and buffer areas adjacent to the Southern Pacific Railroad tracks east of the landfill.

2.4 Facility Layout and Specific Activities

The location of buildings, storage areas, and pervious areas are shown on the Site Map in Appendix B, and the associated activities are described below. The approximate location is noted in parenthesis based on grid annotation shown along the border of the Site Map.

Building A (E-6) is used for preventative maintenance for light-fleet vehicle and equipment, storage space, offices for Landfill Operations, staff locker room and rest rooms. Maintenance activities include: oil and fluid changes, tire rotation and replacement, and light replacements to vehicles and equipment. Examples of maintained equipment include: Go4s, lawnmowers, light-fleet vehicles, and ambulances. There are four rooms within this building used for storage: Head Start stores school-type supplies; Parks and Recreation stores aquatic supplies, some fertilizers, and miscellaneous park/playground equipment; Solid Waste stores equipment for landfill operations including pesticides and pesticide application equipment.

Building B (E/F-6) has indoor storage of miscellaneous office supplies. There is also an attached, outdoor storage area used to temporarily store miscellaneous building supplies as well as some temporary parking of light, mechanized equipment.

Building C (F/G-6/7) has been converted to a partially enclosed skate park. All runoff from within this building flow to the storm drain drop inlets located off the east end of building C. The storm drain discharges into the combined system.

The following storage areas are paved with asphalt or concrete:

Storage Area 1 (E-7) is managed by Parks and Recreation and is located along the northern edge and the northwest corner of the corporation yard. The northwest corner location contains rock, sand and soil stockpiles that Parks uses for playgrounds and park landscaping. The northern edge contains empty garbage and recycling cans used at parks or for special events.

Storage Area 2 (E-6) is also managed by Parks and Recreation, and is located along the western edge of Building A, there are wood pallets and empty five-gallon chlorine buckets.

Storage Area 3 (F-7) is managed Solid Waste and is along a section of the northern edge of the corporation yard. Solid Waste temporarily stores illegally dumped items, and roll-away garbage bins. There are also some miscellaneous wood, plastic, and metal items stored along the fence near the old bailer building (now the skate park).

The following areas are on a pervious surface:

Storage Area 4 (B/D-4) is managed by Solid Waste. This is a soil storage area within Unclassified Disposal Area A, and is used for maintaining the proper elevations of the landfill.

Hazardous Material Storage Area 1 (E-6) The city landfill possesses an above ground 1,000 gallon recycled oil storage tank, and is located off the west end of building A.

Hazardous Material Storage Area 2 (Fueling Area) (F-6) The diesel and unleaded fueling station is located off the east end of building A. There is a 4000 gallon diesel tank and a 2000 gasoline tank. The fueling area is uncovered, placed on a flat concrete pad, and equipped with an emergency shutoff switch and a spill kit; furthermore, the runoff from this location enters the combined sewer system.

The following sections are parking areas at the Corporation Yard:

Parking Area 1 (G-6/7) is managed by the Department of Parks and Recreation, and is located to the east of Building C. This parking is for the parking for Sutter's Landing Park activities.

Parking Area 2 (E/F-6) is located in front of Buildings A and B, and is staff parking for both Landfill staff and Fleet Management staff.

Parking Area 3 (F-6) is east of Building A and is used for employee parking. There is also large equipment that uses the parking area behind Building A. Surface runoff from all of these parking areas drains to the combined sewer system.

The following features and activities performed at this site are described but are not identified in Appendix B.

Groundwater extraction wells The purpose of the wells is to draw trace substance which have migrated off site back on site at the south property line and to maintain a slight gradient of fresh water near the property line to prevent further migration of groundwater from the landfill. Once the migration of trace substances has been controlled groundwater pumping will be reduced.

Leachate collection and recovery system was installed over WMU B's compacted liner. The collection piping drains to a collection sump/pump station at the west end of WMU B which is equipped with two 150-gallon per minute (gpm) pumps (one serving as back-up). The leachate pumps operate using a float control system, which ensures the sump is emptied when liquids accumulate to a pre-set level. Leachate is pumped out into the City of Sacramento's combined storm water/sanitary sewer system. The leachate quality is monitored on a regular basis.

Water Quality Monitoring Wells (19) are located at the landfill. The groundwater elevation is monitored once a month at each well and three wells are sampled monthly. All nineteen wells are sampled on a quarterly basis. The objectives of the monitoring wells are to track cleanup progress and ensure that groundwater contamination is not spreading further off-site.

Landfill gas collection system includes 100 interior extraction wells—82 interior extraction wells at WMU A and 18 at WMU B—and 66 perimeter extraction wells for migration control purposes. The interior extraction wells extend into the refuse mass to depths ranging from approximately 40 to 60 feet below ground surface, and the perimeter extraction wells are installed in a soil levee/berm along the southern fill perimeter. The Interior extraction wells within WMU A are under a lease agreement with Gas Recovery Systems, Incorporated (GRS) which captures the landfill gas for use as an alternate energy source. Landfill gas extracted from the perimeter system is combined with excess gas from WMU A and WMU B (i.e. landfill gas that is not used for cogeneration) and combusted in one of two ground flares maintained by GRS and the City. The location of the gas recovery system lies within the drainage area discharging to the combined sewer system.

2.5 Description of Storm Drainage System

The drainage system for the 28th St. Landfill is shown on the Site Map in Appendix B. The storm drain system at the landfill consists of open channels, detention basins, and storm drain piping. The storm and sewer systems are separate systems, but all sewer and most drainage discharges into the combined system at the intersection of 28th Street and E Street. For the purpose of this SWPPP, all piping systems for the site will be referred to as the combined sewer/stormwater system. Surface runoff that doesn't discharge into the combined sewer/stormwater system eventually discharges into the American River through a culvert, or is absorbed and evaporated by the Retention Pond. The map in Appendix B shows the drainage sheds and is summarized below.

- All paved areas and the western portion of the pervious areas drain into the combined sewer/stormwater system.
- The south west portions of the pervious area drains to the south where it is retained in a detention pond for sedimentation before discharging into the combined sewer/stormwater system.
- The north central portion drains north to a 12 inch CMP which discharges into a vegetated buffer strip adjacent to the American River.
- The north eastern portion of the landfill drains to the east where it is collected in a combined flood control/water quality detention basin that discharges into the American River.
- The south eastern portion of the pervious area drains to a retention pond located in the furthest, south east corner of the landfill where the runoff infiltrates into the soil.

Non-stormwater discharges from various operations at this site also contribute to the discharge flows into the combined sewer/stormwater, and these flows include:

- Groundwater from production wells.
- Leachate from WMU B (when sufficient amount of runoff present for sump pump to turn on which only occurs during heavy rain events).

- Condensate from methane recovery system.

2.6 Past Significant Spills and Leaks

There have been no known spill events experienced at the Landfill while it has been closed. Typically, the only areas of concern for spills would be on impervious surfaces which can impact storm water drainage systems and local water bodies. The fleet maintenance shop and fueling areas practice good housekeeping and spill response techniques to protect spills from entering the combined system. However, there has been record of the migration of landfill gas, and elevated levels of ammonia in soil found along the American River and south of the landfill near the Capital City Freeway. As a result, a passive landfill gas collection trench east of the active site was constructed to intercept any landfill gas migrating in that direction. In addition to controlling migration of combustible gases, the system serves as a corrective action measure to help prevent migration of gas-borne contaminants, principally volatile organic compounds (VOCs) that could otherwise migrate to groundwater.

3.0 DESCRIPTION OF POTENTIAL SOURCES OF POLLUTION

The following sections describe the potential pollutants and pollutant sources to storm water discharge at the City landfill. The site was designed and is operated in a manner that minimizes potential pollutants to the environment. For example, wet land detention basins were designed to treat runoff before it is discharged into the river. There is also a buffer strip between the discharge location and the American River. As described in greater detail in Section 4 of this Plan, management practices and employee training are utilized to the greatest extent possible to ensure that potential discharge of pollutants to storm water are minimized.

The following section describes the potential pollutants present at the facility and the estimated annual quantities of these pollutants in storm water.

3.1 Pervious Portion of Landfill Discharging to American River

The stormwater runoff discharged to the American River at the two locations shown in Appendix B is currently being monitored, and is limited to surface runoff from the landfill cover and access roads. Potential pollutants would be sediment and possibly some metals and herbicides bound to the sediments.

4.0 STEPS TO REDUCE NON-STORM WATER DISCHARGES

This section of the SWPPP describes the management and operating procedures utilized at the City landfill to control potential pollutants and minimize their possible impacts to storm water. The section includes discussions of structural source controls and facility management practices.

4.1 What are Best Management Practices?

Source Control

Storm water regulations state that BMPs are to be implemented in order to reduce the contamination, or potential for contamination, of storm water to the "maximum extent practicable" (MEP). The most effective, and usually least costly, BMPs are source control measures; for example, regular sweeping around the material bins and storage areas, and closing lids on dumpsters. More expensive source controls, like constructing a permanent cover over material storage areas, are most the most effective.

Treatment Controls

Treatment BMPs, such as storm water interceptors and detention basins are less desirable than source controls for two reasons: 1) they are more cost and maintenance intensive and 2) treatment means that the storm water has already become polluted. As demonstrated by this SWPPP, some treatment BMPs are probably unavoidable because of the nature of the activities at the CWTP; however, the SWPPP attempts to optimize the use of source controls.

4.2 Treatment Controls

4.2.1 Detention Basins

Detention Basin A is a wet detention basin designed for a 100-year, 24-hour precipitation conditions was constructed to retain runoff from the north eastern corner of the landfill before discharging into the American River, and is shown in Appendix B. The design incorporated water quality concerns by retaining the runoff to allow solids to settle. The sediment accumulated in the detention basin is removed on a routine basis.

Detention Basin B, as shown in Appendix B, has been constructed for the runoff flowing to the south west corner of the landfill; furthermore, it is similar in design to the north-east detention basin. Since discharging from this detention basin to the American River is not feasible, the runoff from this detention basin is discharged into the combine system.

4.2.2 Clay Liner

Once the landfill reached maximum capacity, a two foot thick base cover (rock and dirt) was placed over the final lift of refuse followed by a one foot clay cap and a one foot of cover soil. The clay cap reduces percolation down through the refuse and into the groundwater and leachate collection system. Consequently, surface runoff from the capped areas is usually increased. The detention basins discussed above were designed to control runoff from a large portion of the landfill. By preventing percolation, pollutants associated with the buried refuse are kept from commingling with the runoff.

4.2.3 Retention Pond

The Retention Pond is located in the south east corner of the landfill just north of Capitol City Freeway and just west of the Union Pacific Railroad. Surface runoff from a portion of the pervious area within WMU B collects within this retention pond where the runoff infiltrates into the soil.

4.3 Source Control

4.3.1 Erosion Control

A two foot layer of top soil is placed over the clay liner to promote the growth of vegetation. The landfill was seeded for vegetation once the top soil is placed; moreover, the vegetation selected requires minimum irrigation and maintenance needs. By covering bare land, soil erosion will be kept to a minimum and total suspended solids discharged to the river will be reduced. Additionally, these capped sections of the landfill are monitored and maintained to promote runoff and to prevent ponding.

4.3.2 Sump at Maintenance Facility – Drains to Sewer System

A sump was constructed in the wash rack, and is designed to settle out solids and other refuse before the waste water is discharged into the sanitary sewer system.

4.3.3 Training

Training sessions in the form of field visits and/or meetings will be conducted by Stormwater staff as needed. The goal of the training sessions will be to address BMP concerns and weed abatement practices.

5.0 MONITORING AND RECORD KEEPING

City Landfill personnel maintains a surface water monitoring program that complies with the General Industrial Storm Water Permit, ORDER NO. R5-2004-0039. A written Sample Collection and Analysis Plan (sampling plan) that complies with the Permit requirements and has been developed and is included as Appendix A. This written sampling plan identifies monitoring locations, constituents to sample, quality control/quality assurance of sample and sampling protocols. The sampling results will be reviewed as needed to evaluate implementation and effectiveness of BMPs (erosion control inspections vegetated slopes and detention basin inspections). The monitoring for the Landfill will include visual observations of the facility (i.e., vegetated slopes and surface water drainage structures), and storm water sample collection for analysis. These two components of monitoring are outlined below:

5.1 Visual Observations

5.1.1 Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **15 September**, the Municipal Operations staff person from the Department of Utilities Stormwater Section and/or the Landfill staff will assess the north-eastern detention basin for damage.

Any necessary erosion control measures shall be implemented by 15 November; additionally, any construction, maintenance, or repairs of storm water management measures designed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes shall also be completed by **15 November**.

5.1.2 Storm Events

Landfill staff will inspect the detention basin and drainage ditches for damage within 7 days following major storm events. Necessary interim repairs will be completed within 10 days of the inspection and permanent repairs are to be completed when feasible.

5.2 Monitoring of Storm Water

Landfill personnel will conduct monitoring at the specified sites when runoff from the facility has combined to form a definable runoff stream; moreover, adequate flow volume must be available for sample collection. See the Sample Collection and Analysis Plan contained within Appendix A.

5.3 Results of Water Quality Data Collected

A review of the water quality data for the landfill was conducted by Larry Walker and Associates (LWA) in November, 2007. Sampling data was prepared by the landfill staff, and consisted of raw data along with a statistical summary of that data. LWA reported that the data are generally within the expected range. The review of this data also revealed the need for a review of sampling procedures and analytical methods. The City has been evaluating the analytical methods, and has established QA/QC methods to be implemented (see Appendix A for the proposed QA/QC measures to be implemented).

5.4 Estimate of Annual Quantities of Potential Pollutants in Storm Water Runoff

Since QA/QC analysis for the data quality was not performed, it was not possible to draw definitive conclusions on the estimation of pollutant loads contained within the Landfill's storm-water runoff. Utilizing the given data and the professional judgment of the reviewer, average annual loads were calculated and are summarized as follows:

Estimated 28th Street Landfill Runoff Annual Average Load

Constituent	Concentration Units	Average Concentration	Average Annual Load	Load Units
Ag, dissolved	µg/L	3.3	56.8	grams
Al, dissolved	µg/L	909	15,645	grams
As, dissolved	µg/L	552	9,501	grams
Ba, dissolved	µg/L	66.9	1,151	grams
Be, dissolved	µg/L	1.9	32.7	grams
Cd, dissolved	µg/L	2.5	43.0	grams
CN, dissolved	µg/L	4.3	74.0	grams
Co, dissolved	µg/L	5.8	99.8	grams
Cr VI, dissolved	µg/L	4.1	70.6	grams
Cr, dissolved	µg/L	18.3	315.0	grams
Cu, dissolved	µg/L	14.2	244.4	grams
Hg, dissolved	µg/L	0.0667	1.1	grams
Mn, dissolved	µg/L	104.2	1,793	grams
Ni, dissolved	µg/L	1,045	17,986	grams
Pb, dissolved	µg/L	87.4	1,504	grams
Sb, dissolved	µg/L	18.3	315.0	grams
Se, dissolved	µg/L	314	5,404	grams
Sn, dissolved	µg/L	38.7	666.1	grams
Tl, dissolved	µg/L	84.1	1,447	grams
V, dissolved	µg/L	9.2	158.3	grams
Zn, dissolved	µg/L	193	3,322	grams
Chloride	mg/L	10.5	181	kilograms
COD	mg/L	79.6	1,370	kilograms
Nitrate	mg/L	1.43	24.6	kilograms
TDS	mg/L	254	4,372	kilograms
TSS	mg/L	39.7	683	kilograms
TOC	mg/L	23.62	407	kilograms

5.5 Record Keeping

Landfill staff retains records of all inspection and monitoring activities as dictated by Permit requirements. In addition to surface water monitoring and visual inspections, Landfill staff collects records for additional Permit requirements not associated with this SWPPP. The surface water monitoring records are included with all other records retained. Annual and semiannual reports for all monitoring activities are generated and submitted to the Regional Water Quality Control Board.

APPENDIX A

Storm Water Sample Collection and Analysis Plan

**City of Sacramento's 28th Street Landfill
Storm Water Sample Collection and Analysis Plan**

Objectives

The objectives of this storm water monitoring program developed for the City of Sacramento's closed Landfill is to ensure that all storm water discharges are in compliance with permit requirements of WDR Order No. R5-2004-0039. Since the majority of the runoff from this facility discharges to the combined sewer system, and only a portion of the capped landfill discharges to the American River, the potential pollutant load is minimized to sediment transported from the vegetated topography and any additional pollutants that could be bound to that sediment (i.e., metals, herbicides, etc.). This monitoring program includes: sample collection procedures; sample preservation information and shipment procedures; Sample quality assurance/quality control (QA/QC) procedures; and Chain of Custody control.

Sample Collection Procedures

Sampling Sites

Storm water sample collections are performed at the landfill's northern detention basin outfall to the American River, and the 12-inch corrugated metal pipe, which drains about 20% of the landfill area to the American River. The 12-inch pipe is slightly northeast and upstream of the landfill, and the detention basin outfall is located slightly northwest and downstream of the landfill. These two sampling locations are indicative of the quality and quantity of sheet flow runoff from this portion of the Landfill and are not commingled with runoff from surrounding areas. Locations of the sample sites are identified on the in Appendix B. Samples are collected and analyzed for the monitoring parameters in accordance with the frequency specified in Table I and methods specified in Table II.

Sample Identification and Labeling

Sample bottles and identification labels are supplied by the contracted lab, Calscience. The lab labels each of the various types of sample-collection bottles with the appropriate constituents to be analyzed for, and the sampling personnel only need to fill in the date and time on the labels.

Sample Collection

Storm water samples are collected after the first storm of the rainy season that produces significant flow and one other time during the wet season. Sampling is conducted during or shortly after storm events or when water is flowing in the drains. One set of grab samples will be taken at each site during each event. It is desired that these grab samples be collected during peak flow; however, due to the difficulty in predicting the time of peak flow, grab sampling during peak flow may be problematic. Once samples are

collected, samples must immediately be placed on ice and remain in ice until transferred to analytical laboratory.

Clean Sample Handling

“Clean sampling” techniques are required in the collection and handling of water samples in a way that does not result in contamination, loss, nor change in the chemical form of the analytes of interest. In order to reduce potential contamination, sample collection personnel will adhere to the following rules while collecting stormwater samples:

- No smoking while collecting samples.
- Never sample near a running vehicle. Do not park vehicles in immediate sample collection area (even non-running vehicles).
- Avoid allowing rainwater to drip from rain gear into sample bottles.
- Do not eat or drink during sample collection.
- Do not breath, sneeze or cough in the direction of an open sample bottle.
- Wear clean gloves when handling bailer, bottles, and caps.

Sampling Chain of Custody

All sample custody and transfer procedures will be based on EPA recommended procedures for documenting sample collection and handling processes. Samplers will adhere to proper custody and documentation procedures for all sampling activities. Chain of custody forms will be used to document the relevant information for each sample bottle and the transfer of bottles to the laboratory. Fill out chain of custody forms prior to each event leaving only the date and time of sample collection blank. Date the time of sample collection will be completed prior to transporting samples to the lab.

Transport to Lab

The primary method of sample delivery is for the samplers to deliver the samples to the lab directly. The contracted lab for these surface water samples is Calscience Environmental Laboratories, Inc. located at 7440 Lincoln Way, Garden Grove, CA 92841-1427

Sample Quality Assurance/Quality Control (QA/QC) Procedures

Quality assurance is the program that assures the reliability of the data, and quality control is the daily activities conducted to meet data quality goals. The importance of a QA/QC program is to increase reliability, credibility, and defensibility of data and decisions made based on the data. QA/QC samples will be collected to evaluate the consistency of sample collection and analyses. The following quality control samples may be analyzed during one of the monitoring events.

- Matrix Spike/Duplicate
- Field Duplicate

Matrix Spike/Duplicate (MS/MSD) give an indication of matrix interference, and laboratories are required to perform these at a frequency of 10%. MS/MSD samples are collected by obtaining additional sample volume; for example, if collecting a 1L volume for the sample then additional 1L is required for the MS and 1L for the MSD. The MS/MSD samples should have the same label designation as the sample itself and also marked as a MS/MSD.

Field Duplicate samples are collected by filling two bottles with the same sample and giving the field duplicate a fictitious name and collection time. The fictitious name and location shall be recorded in the field notes by the sampler.

TABLE I
SURFACE WATER MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Temperature winter ¹	°C	Twice each
Electrical Conductivity winter ¹	µmhos/cm	Twice each
pH winter ¹	pH units	Twice each
Turbidity winter ¹	Turbidity units	Twice each
Monitoring Parameters		
Total Suspended Solids winter ¹	mg/L	Twice each
Total Dissolved Solids (TDS) winter ¹	mg/L	Twice each
Chloride winter ¹	mg/L	Twice each
Sulfate winter ¹	mg/L	Twice each
Nitrate as Nitrogen winter ¹	mg/L	Twice each
Bicarbonate Alkalinity winter ¹	mg/L	Twice each
Constituents of Concern		
Carbonate	mg/L	Annual
Chemical Oxygen Demand	mg/L	Annual
Total Organic Carbon	mg/L	Annual
Total Alkalinity	mg/L	Annual
Dissolved Oxygen	mg/L	Annual
Oil and Grease	mg/L	Annual
Inorganics (dissolved) ²	mg/L	Annual

1. Surface water samples are collected after the first storm of the rainy season that produces significant flow and during at least one other storm event in the wet season.
2. See Table II

TABLE II

**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL
METHODS**

<u>Field Parameters</u>	<u>Method</u>
pH	150.1
Electrical Conductivity	2510
<u>General Minerals</u>	<u>Method</u>
Bicarbonate	2310B
Chloride	300 (anion scan)
Nitrate – Nitrogen	300 (anion scan)
Sulfate	300 (anion scan)
Total Dissolved Solids (TDS)	2540C
<u>Inorganics (dissolved):</u>	<u>Method</u>
Aluminum	200.7/6010
Antimony	200.7/7041
Barium	200.7/6010
Beryllium	200.7/6010
Cadmium	200.7/7131A
Chromium	200.7/6010
Chromium VI ⁺	7199/1636
Cobalt	200.7/6010
Copper	200.7/6010
Silver	200.7/6010
Tin	200.7/6010
Vanadium	200.7/6010
Zinc	200.7/6010
Iron	200.7/6010
Manganese	200.7/6010
Arsenic	200.9/200.8
Lead	200.9/200.8
Mercury	7470A
Nickel	200.9/200.8
Selenium	200.9/200.8
Thallium	200.9/200.8
Cyanide	9010
Sulfide	9030
<u>Other Parameters</u>	<u>Method</u>
Total Organic Carbon	415.1
Total Alkalinity	310.1
Total Suspended Solids	160.1
Bicarbonate Alkalinity	130.2
Chemical Oxygen Demand	410.4
Dissolved Oxygen	360.1/360.2
Oil and Grease	5520/1664

APPENDIX B

Site Map



LEGEND

- 120' — DRAINAGE PIPE
- DRAINAGE SHED BOUNDARY
- OUTDOOR STORAGE AREAS
- HAZARDOUS MATERIAL STORAGE AREAS

REVISIONS				BENCH MARK		FIELD BOOK		CITY OF SACRAMENTO				CITY OF SACRAMENTO SWPPP's AND FPPP's				SHEET 1 OF 1 APPENDIX B					
NO. DESCRIPTION DATE BY				DESCRIPTION: ELEV.:		SCALE: HORIZ: 1" = 200' VERT: 1" AT 100%		DEPARTMENT OF UTILITIES				28TH STREET LANDFILL									
								DRAWN BY: MER				DESIGNED BY: R. LIVINGSTON						CHECKED BY:			
								DATE: 9/07				DATE: 9/07						R.C.E.: DATE: 9/07			
												2ND DRAFT				CCNO					